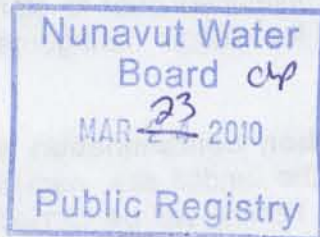




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Nunalingni Kavamatkunillu Pivikhaqautikkut
Department of Community Government Services
Ministère des Services communautaires et gouvernementaux

Phyllis Beaulieu
Manager of Licensing
Nunavut Water Board
P.O. Box 119
Gjoa Haven, NU X0B 1J0



March 10, 2010

**Sub: Final response regarding the Plan for compliance for Water License
3BM-CLY 0909 of the Hamlet of Clyde River**

Dear Ms Beaulieu,

I am writing you on behalf of the Hamlet of Clyde River in response to the letter of Mr. David Hohnstein C.E.T, Director of Technical Services, NWB, of dated February 22, 2010.

In order to address the issues and concerns regarding plan of compliance, we are working together with the Hamlet of Clyde River along with our consultant Trow Associates Inc and have developed the following strategies.

Trow has a major role in developing some of the important documents as a part of the compliance plan. They are the consultant for the design and supervision of new sewage lagoon construction and rehabilitation of the existing sewage lagoon. They are also involved in abandonment and restoration of the existing landfill site and for design and construction supervision of the new land fill site. In response to the Plan of Compliance, their commitment of dated March 02, 2010 is attached in **Appendix-A**.

In addition, to address the compliance issues the GN will commission a study to improve the use of the waste management process. From this study, we will be able to know exactly what the needs of each community are. We will use this study to educate the municipalities in the proper operation of their landfill site, creating training manuals, which will lead to a landfill operation training program through MTO. We will incorporate this study to design new landfill site to enable the communities to properly segregate their solid wastes within the landfill site.

On the top, the following action will be taken jointly with the Hamlet of Clyde River with the assistance of the Consultant.

1. **Sludge management plan:** Three Sludge samples collected from the existing sewage lagoon will be tested in the accredited lab in Ottawa following the guidelines attached in **Appendix-B**. Following the test results, the sludge



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management plan will be developed prior to start rehabilitation of this existing facility. The test results and the sludge management Plan will be available at the end of July, 2010.

2. **Remediation of Hydrocarbon contamination soils:** The hamlet spread the contaminated soil all over the landfill site, partially covered and compacted in 2009 to remediate the soil. Testing will be carried out on the cover material as part of the exiting land fill site sometime in July 2010.
3. **Landfill leachate monitoring:** Three monitoring wells will be designed by TROW and built during this summer 2010 and ground water quality will be monitored until 2013 and results will be attached with the hamlet annual Report.
4. **Monitoring Program:** Hamlet has established an account with the following accredited lab in Ottawa and initially started monitoring the wastewater quality only for two parameters, BOD and TSS.

Caduceon Environmental Laboratories
2378 Holly Lane, Ottawa, ON, Canada K1V 7P1
Tel: (613) 526-0123
Fax: (613) 526-1244
www.caduceonlabs.com

From the summer 2010, they will be analyzing all the parameters mentioned in the water license.

They are monitoring chlorine residual concentration in the drinking water on day to day basis and also microbiological parameter with the Iqaluit Lab of GN-DOH on monthly basis.

5. **Quality Assurance and Quality control (QA/QC) Plan:** QA/QC Plans for water and wastewater have been submitted to the Board. We are following QA/QC of the Caduceon Environmental laboratories, an accredited laboratory of Ottawa, for monitoring wastewater and sludge quality. And for water supply, we are following the guidelines of Department of Health and Social services of Government of Nunavut. We are satisfying the Federal drinking water guidelines on chlorine residual and zero E-Coli content in supply water.

We need to develop additional QA/QC plans for groundwater monitoring, and contaminated soil remediation during summer 2010.



However, a standalone QA/QC plan for all the Environmental facilities will be finalized and submitted for Board approval by December, 2010 once the design of the monitoring wells will be completed.

6. **Hazardous Waste Management Plan:** This is a part of the O&M manual of the new Waste management facility. A land farm will be created as an independent cell inside the new landfill site for contaminated soil remediation. This facility will be operational in 2011.
7. **Schedule of commissioning:** The construction of the New Sewage Lagoon is complete. The Berms will be reshaped and Thermistors will be installed this summer. This facility will be commissioned at the end of this summer 2010.

Following commissioning this new facility, the existing cell will be rehabilitated and incorporated into the new facility.

New waste management facility is in design stage. This facility will be built and commissioned in 2011. Soon after the exiting landfill site will be decommissioned.

8. **Compliance Plan:** A stand alone compliance Plan for all the environmental facilities under the water license will be available for Board approval by December 2010.

I believe the commitment offered above will satisfy the requirements for the Plan of compliance for the water license of the Hamlet of Clyde River.

Please keep me in the loop for the approval process and contact me at any time if you have any questions or need any further clarification.



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Department of Community Government Services
Ministère des Services communautaires et gouvernementaux

Thank you,

Bhabesh Roy, M.A.Sc., P.Eng.
Municipal Planning Engineer
Community Government Services
Baffin Region, Government of Nunavut
P.O.Box 379, Pond Inlet, X0A 0S0
Ph-867 899 7314
Fax-867 899 7328
E-mail: broy@gov.nu.ca

Copy to : Roy Green, Director, Community Infrastructure, GN-CGS
Rosemary Kilpatrick, Manager, Community Infrastructure, GN-CGS
Timoon Toonooo, Regional Director, GN-CGS, Baffin Region
Johnathan Palluq, Assistant Regional Director, GN-CGS, Baffin Region
Patricio Fuentes, Regional Manager of Projects, GN-CGS, Baffin Region
Bill Buckle, SAO, Hamlet of Clyde River

Appendix-A

Report of Trow Associates Inc.



Since 1957

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March 2, 2010

Ref: OTCD00019055A

Mr. Bhabesh Roy, M.A.Sc., P.Eng.
Municipal Planning Engineer
Community & Government Services
Baffin Region, Government of Nunavut
P.O. Box 379
Pond Inlet, NU X0A 0S0

Via Facsimile: 867-899-7328

**Request for Final Response
Compliance Plan for Water Licence – Clyde River**

Dear Mr. Roy:

We have reviewed the documents provided regarding the final response for the plan of compliance for the water licence for the Hamlet of Clyde River (Hamlet), including the letter from the Nunavut Water Board (NWB) dated February 22nd, 2010, the letter from the Department of the Environment dated February 4th, 2010 and the letter from Environment Canada dated February 4th, 2010 and the Indian and Northern Affairs Canada (INAC) dated February 10th, 2010. From a review of this correspondence we offer the following.

Department of Environment

1) The provision of the abandonment and restoration plan for the existing landfill site is part of Trow's project for the design and construction of a new landfill. According to our project schedule this work is to be completed during the Fall of 2010. To allow time for proper review and approval, I recommend a November 30th, 2010, delivery date of this submission.

Environment Canada

1) Requirements for Operation and Maintenance Manuals for all existing and proposed facilities.

Trow was involved in the development of the new sewage disposal facility and as per the water licence will submit an Operation and Maintenance Manual for review 90 days prior to commissioning, therefore we anticipate a delivery date to be May 31st, 2010.

Trow is also involved in the development of a new solid waste site for the Hamlet and as part of that project a new Operation and Maintenance Manual will be prepared.

The required Operation and Maintenance Manuals for the other existing facilities, including the water supply facility and the existing solid waste management facility are outside Trow's responsibility and scope of services.

2) The monitoring program referenced appears to be related to the enhanced sewage disposal facility and therefore a monitoring program will be implemented upon commissioning of the new facility, anticipated late summer, early fall 2010 with the first sampling occurring during decanting in 2011. It should be noted that the comment includes acute toxicity testing which it is Trow's understanding has been removed from the requirements of the water licence.

- 3) The request for monitoring program data from 2003 to current is outside of Trow's mandate and therefore is the GN's responsibility.
- 4) Regarding sludge management during construction, this will be addressed by Trow as part of the development of the Operation and Maintenance Manual and therefore it is anticipated that a submission will be prepared and submitted for approval by May 31st, 2010.
- 5) Landfill leachate monitoring is related to the existing solid waste disposal facility and therefore is the Hamlet's responsibility. QA/QC plan would fall under the GN mandate or Hamlet mandate.

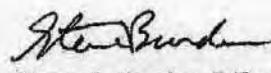
Indian and Northern Affairs Canada

- 1) General - This item falls under GN's mandate.
- 2) Inspection Reports - This historical information on the operation of the existing facility with the Hamlet falls under Hamlet or GN responsibility.
- 3) O&M Manuals - As per the previous discussion, Trow will prepare the copy of the Operation & Maintenance Manual for the enhanced sewage disposal facility as part of their current scope of work. Anticipated delivery date is May 31st, 2010. In addition, an Operation and Maintenance Manual for the new solid waste facility will be prepared as part of Trow's mandate. Operation and Maintenance Manuals for all other facilities fall under the Hamlet or GN's responsibility.
- 4) Sludge Management - This item will be addressed as part of the Operation and Maintenance Manual for the enhanced sewage facility.
- 5) Remediation of Hydrocarbon Contaminated Soils - This is outside of Trow's mandate and therefore falls under Hamlet or GN's responsibility.

We hope that the above clarifies Trow's role in assisting the GN and the Hamlet in responding to the request for final information regarding the compliance plan for the water licence for the Hamlet. Should you have additional questions or require additional information please do not hesitate to contact Steven Burden at 613-225-9940 ext. 257

Yours truly,
Trow Associates Inc.


Stephen A. Douglas
Senior Designer
Infrastructure Services


Steven L. Burden, P.Eng.
Senior Project Manager
Infrastructure Services

Appendix-B

Guidelines for effluent quality and wastewater treatment

From: Greg Clarkin [mailto:gclarkin@caduceonlabs.com]

Sent: Monday, March 08, 2010 4:33 PM

To: Roy, Bhabesh; kpin@caduceonlabs.com

Cc: 'Bill Buckle'; 'Gord Murphy'

Subject: RE: [AUTORESPONSE] - Out of Office

Hi Bhabesh,

I've attached a copy of the "Guidelines for Effluent Quality and Wastewater Treatment at Federal Establishments" that I received from our HC-FNIH clients.

We've typically being doing a package as follows:

- 1 1L Amber Glass Bottle, HCl preservative, Oil & Grease – Total
- 1 500mL Clear PETE Bottle, 4°C, BOD & pH
- 1 250mL HDPE Bottle, 4°C, TSS
- 1 250mL Amber Glass Bottle, H₂SO₄ preservative, Total Phosphorus, Total Kjeldahl Nitrogen & Phenolics
- 1 250mL Round HDPE Sterile Bottle, Na₂S₂O₃ preservative, E. coli.

Let me know if we can help you with anything else.

Greg Clarkin

Laboratory Manager – Ottawa District

Caduceon Environmental Laboratories

2378 Holly Lane,

Ottawa, ON, Canada K1V 7P1

Tel: (613) 526-0123

Fax: (613) 526-1244

Cell: (613) 720-9765

Website: www.caduceonlabs.com

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